



# PAC-Bayesian approach for kernel methods

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Session : Lois à priori parcimonieuses et estimation en grande dimension

## **PAC-Bayesian approach for kernel methods**

par **Joseph Salmon** et Erwan Le Pennec

In this work on regression with Gaussian error, we study an aggregation procedure relying on the exponential weighting scheme described in Dalalyan and Tsybakov [1]. We obtain PAC-Bayes oracle inequalities in this context valid in both the fixed design case and the random design case. These inequalities are obtained by techniques derived from those described in Catoni [2] and Audibert [3]. We apply those results to the selection of an "optimal" window for Nadaraya-Watson type estimators and obtain a provably efficient estimator implemented with a MCMC-type algorithm similar to the one proposed by Dalalyan and Tsybakov [3].

### *Références :*

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- [3] J.-Y. Audibert, Aggregated estimators and empirical complexity for least square regression, Ann. Inst. H. Poincaré Probab. Statist., vol. 40, no. 6, pp. 685-736, 2004.

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